

WHAT IS CLAIMED IS:

1. An image reading apparatus characterized by comprising:

5 a first light source that emits light in a visible region;

a second light source that emits light in an invisible region;

10 a light guide plate which has said first and second light sources arranged at end faces, and has a first light guide pattern for guiding light emitted by said first light source to an entire light-emitting surface and a second light guide pattern for guiding light emitted by said second light source to the entire light-emitting surface; and

15 a reading device that converts light from an original illuminated by light which is emitted by said first or second light source and guided by said light guide plate into an image signal.

20 2. The apparatus according to claim 1, characterized in that defect information present on an optical path extending from said light guide plate to a solid-state image sensing element is read on the basis of the image signal obtained when the light from the original illuminated by the light which is emitted by said second light source and guided by said light guide plate enters said reading means.

3. The apparatus according to claim 2, characterized

in that the defect information includes information generated when dust or a scratch present on the original itself intercepts the light which is emitted by said second light source and guided by said light  
5 guide plate.

4. The apparatus according to claim 1, characterized in that said light guide has a first light guide pattern formed from a plurality of grooves extending in a direction perpendicular to said first light source on  
10 a surface of said light guide, and a second light guide pattern formed by a plurality of grooves extending in a direction perpendicular to said second light source.

5. The apparatus according to claim 1, characterized in that said first light source is arranged at an end  
15 face of said light guide along a long side, and said second light source is arranged at an end face of said light guide along a short side.

6. The apparatus according to claim 1, characterized in that said second light source emits light in an  
20 infrared region.

7. An illumination apparatus characterized by comprising:

a first light source that emits light in a visible region;

25 a second light source that emits light in an invisible region; and

a light guide plate which has said first and

second light sources arranged at end faces, and has a first light guide pattern for guiding light emitted by said first light source to an entire light-emitting surface and a second light guide pattern for guiding light emitted by said second light source to the entire light-emitting surface.

8. The apparatus according to claim 7, characterized in that said light guide has a first light guide pattern formed from a plurality of grooves extending in a direction perpendicular to said first light source on a surface of said light guide, and a second light guide pattern formed by a plurality of grooves extending in a direction perpendicular to said second light source.

9. The apparatus according to claim 7, characterized in that said first light source is arranged at an end face of said light guide along a long side, and said second light source is arranged at an end face of said light guide along a short side.

10. The apparatus according to claim 7, characterized in that said second light source emits light in an infrared region.

11. The apparatus according to claim 7, characterized in that the illumination apparatus is used in an image reading apparatus for forming light from the original into an image on a solid-state image sensing element via an imaging optical system, and reading image information of the original.

12. An image reading apparatus characterized by comprising:

a first light source that emits light in a visible region;

5 a second light source constituted by aligning on a light-emitting element substrate a plurality of light-emitting elements for emitting light in an invisible region;

a light guide plate that guides light beams  
10 emitted by said first and second light sources through a surface to illuminate an original; and

reading device that converts light from the original illuminated by light which is emitted by said first or second light source and guided by said light  
15 guide plate into an image signal.

13. The apparatus according to claim 12, characterized in that defect information present on an optical path extending from said light guide plate to a solid-state image sensing element is read on the basis  
20 of the image signal obtained when the light from the original illuminated by the light which is emitted by said second light source and guided by said light guide plate enters said reading means.

14. The apparatus according to claim 13,  
25 characterized in that the defect information includes information generated when dust or a scratch present on the original itself intercepts the light which is

emitted by said second light source and guided by said light guide plate.

15. The apparatus according to claim 12,  
characterized in that said second light source has a  
5 plurality of light-emitting apertures formed in the  
light-emitting element substrate in correspondence with  
the light-emitting elements, the light-emitting  
elements are so arranged as to bury light-emitting  
portions of the light-emitting elements in the  
10 substrate with a pattern surface facing a side opposite  
to a light guide surface side, and the light-emitting  
element substrate and an end face of said light guide  
are arranged in tight contact with each other.

16. The apparatus according to claim 12,  
15 characterized in that a light guide surface side of the  
light-emitting element substrate except for  
light-emitting apertures reflects light.

17. The apparatus according to claim 12,  
characterized in that the light-emitting element  
20 substrate is covered with a reflecting member so as to  
be arranged in tight contact with said light guide.

18. The apparatus according to claim 17,  
characterized in that an end of the reflecting member  
on a light-emitting surface side of said light guide is  
25 arranged near an image reading region.

19. The apparatus according to claim 12,  
characterized in that said second light source emits

light in an infrared region.

20. An illumination apparatus characterized by comprising:

5 a first light source that emits light in a visible region;

a second light source constituted by aligning on a light-emitting element substrate a plurality of light-emitting elements for emitting light in an invisible region; and

10 a light guide plate which has said first and second light sources arranged at end faces, and guides incident light beams from the end faces through a surface to substantially uniformly emit light.

21. The apparatus according to claim 20,  
15 characterized in that a light guide surface side of the light-emitting element substrate except for light-emitting apertures reflects light.

22. The apparatus according to claim 20,  
20 characterized in that the light-emitting element substrate is covered with a reflecting member so as to be arranged in tight contact with said light guide.

23. The apparatus according to claim 22,  
characterized in that an end of the reflecting member on a light-emitting surface side of said light guide is  
25 arranged near an image reading region.

24. The apparatus according to claim 20,  
characterized in that said second light source emits

light in an infrared region.

25. The apparatus according to claim 20,  
characterized in that the illumination apparatus is  
used in an image reading apparatus for forming light  
5 from the original into an image on a solid-state image  
sensing element via an imaging optical system, and  
reading image information of the original.

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